SPECTRUM®

TRMM -2/ -4
Management Module Guide

CABLETRON SYSTEMS

The Complete Networking Solution™

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Preface

Use this guide if you are going to manage a TRMM-2/-4 device through SPECTRUM. Before reading this guide, you should be familiar with SPECTRUM's functions as described in the Operation documentation and the Administration documentation.

What is in this Guide

The following chapter descriptions outline the organization of the TRMM-2/-4 Management Module Guide.

Chapter	Description
Chapter 1 Introduction	Describes the TRMM-2/-4 Management Module and model types.
Chapter 2 Device View	Describes the Device view's representation of a TRMM-2/-4, as well as the views available from the Device Menu.
Chapter 3 Configuration View	Describes the Configuration views availablefor the TRMM-2/-4 which provide network management information for the device.
Chapter 4 Event and Alarm Messages	Contains a listing and explanation of the alarm/event messages generated in the Event Log or Alarm View for the TRMM-2/-4 management module.
Chapter 5 Application Views	Describes the Application views for the TRMM-2/-4 management module and the major and minor application information provided by the view.

Conventions

In this manual, the following conventions are used:

- Command names are printed in bold; for example, Clear or Save & Close.

- Menu selections to access a view are printed in bold; for example, Configuration or Detail.

- Buttons are represented by a shadowed box; for example,

Help

Related SPECTRUM Documentation

When using this guide, you should have a clear understanding of SPECTRUM functionality and navigation techniques as described in the Administration documentation, the Operation documentation, and the following documentation:

Report Generator User's Guide

Getting Started with SPECTRUM for Operators

Getting Started with SPECTRUM for Administrators

How to Manage Your Network with SPECTRUM

Other Related Documentation

Refer to the following documentation for more information on managing TCP/IP-based networks:

LAN Troubleshooting Handbook, Mark Miller (1989, M&T Publishing, Inc.)

The Simple Book — An Introduction to Management of TCP/IP-based Internets, Marshall T. Rose, Performance Systems International, Inc.

ISO/IEC 802.5 Token Ring Standards Functional Spec., IEEE

Local Area Networking 802.5 Token Ring Access Method, IEEE

Computer Networks, Andrew S. Tanenbaum, Prentice-Hall, Inc.

Local Area Networks Architectures and Implementations, James Martin & Kathleen K. Chapman for the Arben Group, Inc. (1989, Prentice-Hall, Inc.)

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For additional support for SPECTRUM products, or to make comments or suggestions regarding SPECTRUM or this manual, contact Cabletron Systems Technical Support via one of the following means:

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spectrum-techdocs@ctron.com

Introduction

What is in this Chapter

This chapter describes the SPECTRUM Management Module for the TRMM-2/-4. It also provides the model type names assigned to the TRMM-2/-4 in SPECTRUM. The model type name refers to the template used to specify attributes, actions, and associations for device models in SPECTRUM.

TRMM-2/-4 Management Module

The TRMM-2/-4 Management Module manages TRMM-2/-4 devices using the SNMP network management agent and the Management Information Bases (MIBs), included with the management module.

TRMM-2/-4 Applications

The TRMM-2/-4 supports both common and device-specific applications. Common applications are described in the Bridging Applications Reference, the MIB II Applications Reference, and the Miscellaneous Applications Reference, and are as follows:

- Bridging (CSIBridge)
    - Spanning Tree (Ct_Stp_App)
    - Transparent (Transparnt_App)
    - Ethernet Special Database (Ct_BdgEnet_App)
    - Static (Static_App)
    - PPP
    - Source Routing
- MIB-II (SNMP2_Agent)
    - IP (IP2_App)
    - System (System2_App)
    - ICMP (ICMP_App)
    - UDP (UDP2_App)
- DownLoad App (CtDownLoadApp)

The TRMM-2/-4 supports device-specific applications. These applications are described in Chapter 5, Application View, and are as follows:

- Token Ring Management (Network) Views

RMON and DLM are also supported and SPECTRUM management of these MIBs may be purchased separately. Refer to the documentation provided with the RMON and DLM management modules for descriptions of these capabilities. The following chapters explain how to use SPECTRUM and the management module software to monitor and manage a TRMM-2/-4.

SPECTRUM and the TRMM-2/-4

The TRMM-2/-4 is an intelligent port-assigning Token Ring management module providing port level control and statistics for Cabletron's port-switching Media Interface Modules (MIMs) such as the TRXMIM (Figure 1-1 and Figure 1-2). It is fully IBM Token Ring compatible, IEEE 802.5 compliant, and uses an Intel i960 RISC processor for in-depth management functions. SPECTRUM management of the TRMM-2/-4 is based on Management Information Bases (MIBs) which come as a part of the software module for the model type.

The following chapters explain how you use SPECTRUM and the management module software to monitor your TRMM-2/-4.

Figure 1-1.   Example of a TRMM-2 and Port-Switching MIM Configuration

The STATION Port Interface may be used to monitor and manage network activity on a second Token Ring.
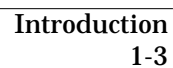
Figure 1-2.   Example of a TRMM-4 and Port-Switching MIM Configuration
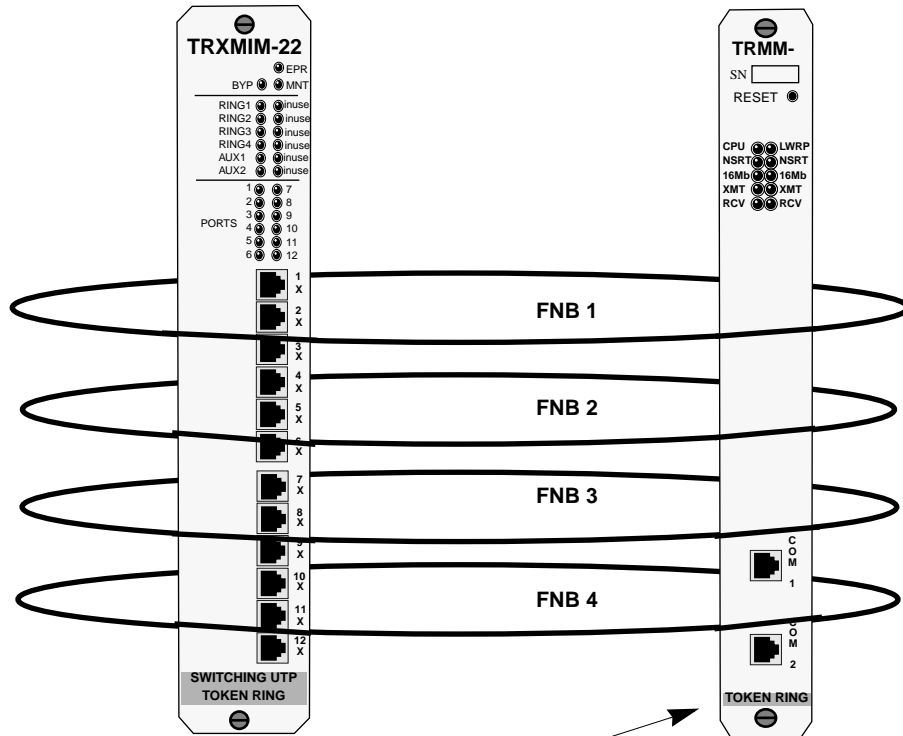
The TRMM-4 may be used to monitor and
manage network activity on four token rings without the need of a station port.

The TRMM-2/-4 Management Module and SPECTRUM allow you to manage
the four FNB rings on each port-switching MIM. Port reassignments are
executed internally by the port-switching MIM. This operation is described in
Chapter 2, Device View.

The TRMM-2/-4 Management Module supports four types of models to
represent the physical TRMM-2/-4, its major and minor applications, and its
interfaces. The following sections provide a description of these models and
how they are related.

SPMA and the TRMM-2/-4

SPECTRUM also provides SPMA (SPECTRUM Portable Management
Application) functionality for the TRMM-2/-4. To open the SPMA Application
view from any SPECTRUM view, do the following:

1.   Select Icon Subviews from the View Menu or click the middle or right
      mouse button.

2. Select Utilities from the Icon Subviews Menu.

3. Select SPMA from the Utilities Menu.

The SPMA Application View provides buttons to select SPMA-specific views and dialog boxes. An example of an SPMA Application View is provided below.

SPMA Application View

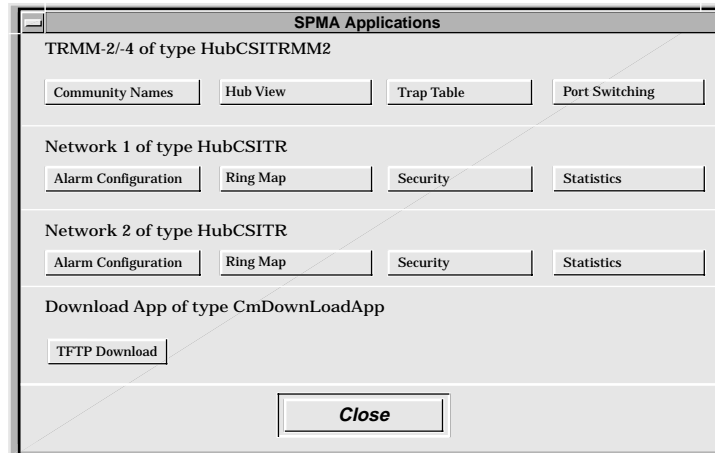SPMA for the TRMM-2/-4 is described in the SPECTRUM Portable Management Application for the TRMM-2/-4 User's Guide and the SPECTRUM Portable Management Application Tools Guide. For details on the following views, refer to the SPECTRUM Portable Management Application for the TRMM-2/-4 User's Guide:

- Chapter 2, Using the TRMM-2/-4 Hub View, describes the visual display of the Hub and explains how to use the mouse within the Hub View. Also described are some basic functions available only from within the Hub view.

- Chapter 3, Port Switching, describes the SPMA Port Switching Tool window and how to use this window to perform port switching operations for a TRMM-2/-4-managed port-switching MIM. This chapter also describes setting the default configuration for the SPMA Port Switching Tool.

- Chapter 4, Ring Map, describes how to graphically display all stations inserted into a selected Token Ring network. Using the Ring Map application, you can display stations and perform station searches according to various parameters, view and compare errors detected, configure link and segmentation traps to suit your management needs.

- Chapter 5, Alarm Configuration, describes how to set thresholds and enable or disable alarms at the ring and station levels.

- Chapter 6, Statistics, describes how to use the statistics windows to view ring and station specific information, including traffic counts, total error counts, and error type breakdowns.

- Chapter 7, Ring Security Configuration, describes how to remotely configure security for the TRMM-2/-4. The Ring Security application allows you to control access to your TRMM-2/-4-managed Token Ring networks and specify a security mode for stations illegally attempting to enter a ring.

For details on the following views, refer to the SPECTRUM Portable Management Application Tools Guide:

- Chapter 2, Using the MIB I, MIB II Tool, explains how to use this tool to view and change MIB I and MIB II object ID values.

- Chapter 3, Using the Community Names Tool, explains Cabletron's "Component" structure of device MIBs, and describes how to change device community names.

- Chapter 5, Using TFTP Download Tool, explains how to upgrade firmware on Cabletron devices equipped with Flash EEPROMs.

- Chapter 6, Using the SNMP Traps Tool, explains how to establish which network management workstations on your network will receive trap alarms from a selected device, and also provides a brief overview of some of the traps supported by Cabletron Systems' devices.

Device View

What is in this Chapter

The Device View for the TRMM-2/-4 allows you to view the logical representations of the TRMM-2/-4 device and ports. The Device View also provides you with menu bar access to views that monitor and control the TRMM-2/-4 and its ports.

Accessing the Device Views

Access the Device Views using one of the following methods:

- Double-click on the Device view button of the TRMM-2/-4 device icon. This will open the Device view that was opened last (i.e. Logical or Physical).

Device View Button
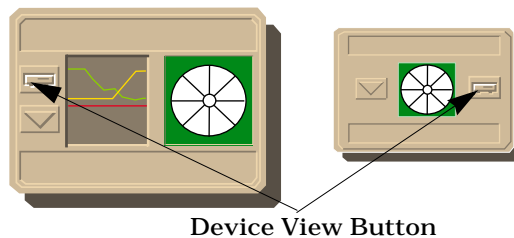
- Highlight the TRMM-2/-4 device icon and select Device->Logical or Device->Physical from the Icon Subviews menu.
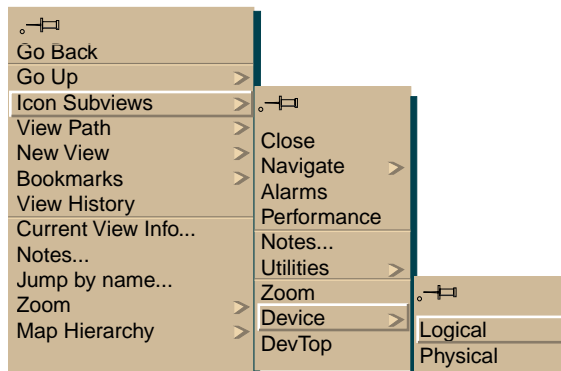
Logical Device View

The Logical Device view for the TRMM-2/-4 in SPECTRUM is a SPECTRUM Portable Management Application (SPMA) view. Refer to the SPECTRUM Portable Management Application for the TRMM-2/-4 User's Guide for details on using the Device View to manage your TRMM-2/-4.

Physical Device View

Access the Physical Device view using one of the methods described in the beginning of this chapter. Figure 2-1 provides an example of a TRMM-2/-4 Physical Device View.

Figure 2-1.   Physical Device View
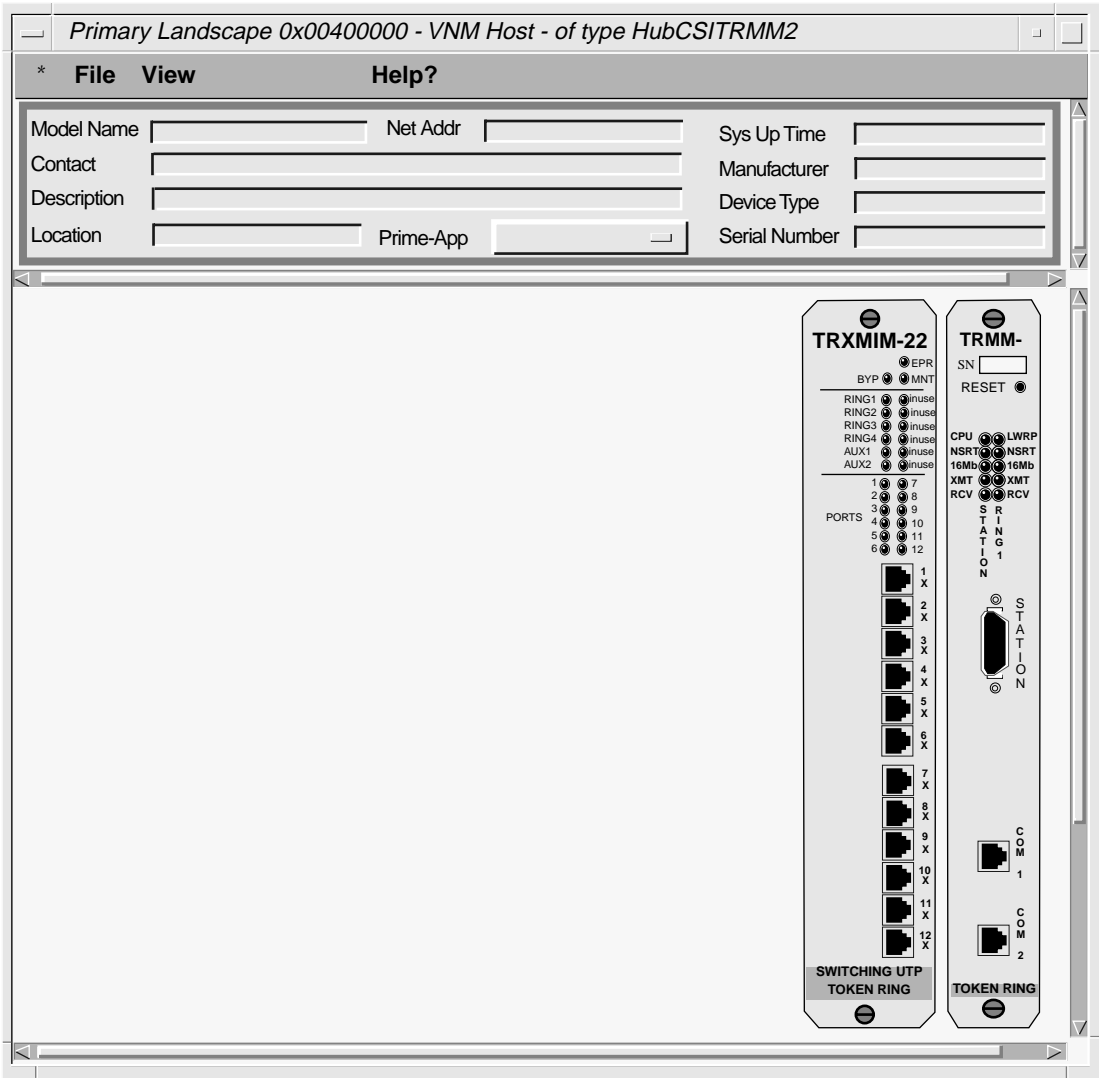
Chapter 3

Configuration Views

What is in this Chapter

This chapter provides general descriptions of the configuration views that are available for the TRMM-2/-4. These views allow you to access device-specific configuration information, as well as network traffic flow and error rates. The TRMM-2/-4 model type supports the following configuration views:

- Configuration Views
- Performance View
- Station Table Views
- Modify Allowed Station List View
- Model Information View

Accessing the Device Configuration View

Access the Device View using one of the following methods:

- Double-click on the Device Configuration view label of the TRMM-2/-4 device icon.
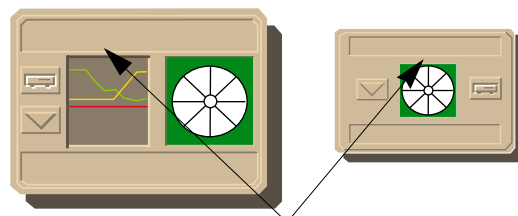
Device Configuration View Label

• Highlight the TRMM-2/-4 device icon and select Configuration.

```
  o─┤
  Go Back
  Go Up                      >
  Icon Subviews              >   o─┤
  View Path                  >   Device               >
  New View                   >   DevTop
  Bookmarks                  >   Application
  View History               >   Acknowledge
  Current View Info...           □ Flash Green Enabled
  Notes...                       Configuration
  Jump by name...                Model Information
  Zoom                       >   Primary Application
  Map Hierarchy              >
```

Device Configuration View

The Device Configuration View provides information on the configuration of the TRMM-2/-4 and allows you to modify the values of some fields. This view provides the following information:

Firmware Revision
Displays the firmware revision for the device being modeled.

Hardware Revision
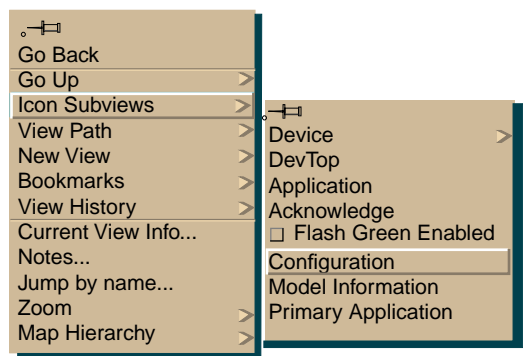Displays the hardware revision for the device being modeled.

Interface Configuration Table
The Interface Configuration Table lists each token-ring port and displays the applicable Interface Address, Description, Type, and Operational Status entries for each port. Buttons at the top of each category column let you determine the category of interest before you set filter conditions or sorting sequence for the listed ports. Once one of the four categories is selected, it remains active until one of the remaining three categories is selected.

Interface Address
The interface identification address for this component.

Description
The description nomenclature for this component.

Type
The type designation for this firmware component.

Operational Status
The operational status (community password) for this component. The default is "public."

Interface Detail

This button opens the Interface Detail View, which lets you change the interface number and the administrative status (ON or OFF) of whichever token-ring port is selected on the Interface Configuration Table.

Update

This button is used to update the information presented in the Interface Configuration Table.

MAC

This button is used to alternate between the MAC (default) and Canonical settings.

Sort Up

This button is used to determine the sorting sequence for the token-ring ports displayed in the table. This button is not active until one of the four categories has been selected. When the button is active it allows you to select between Sort Up, Sort Down, and Un-Sort for those listed entries in the selected catagory.

Set Filter

This button is used to set or clear the filter for the token-ring ports displayed in the table. This button is not active until one of the four categories has been selected. When the button is active it allows you to select the filter option to establish a mask to reject entries containing the filter string you specify.

Component Table

This button opens the Community Names View. This view is an SPMA view and is described in the SPECTRUM Portable Management Application for the TRMM-2/-4 User's Guide.

DownLoad Application

This button opens the TFTP Download View. This view is an SPMA view and is described in the SPECTRUM Portable Management Application for the TRMM-2/-4 User's Guide.

Trap Table

This button opens the Trap Table View. This view is an SPMA view and is described in the SPECTRUM Portable Management Application for the TRMM-2/-4 User's Guide.

Accessing the Network Configuration View

You can access the Network Configuration view through the Icon Subviews menu for the Network Application icon (Figure 3-1).
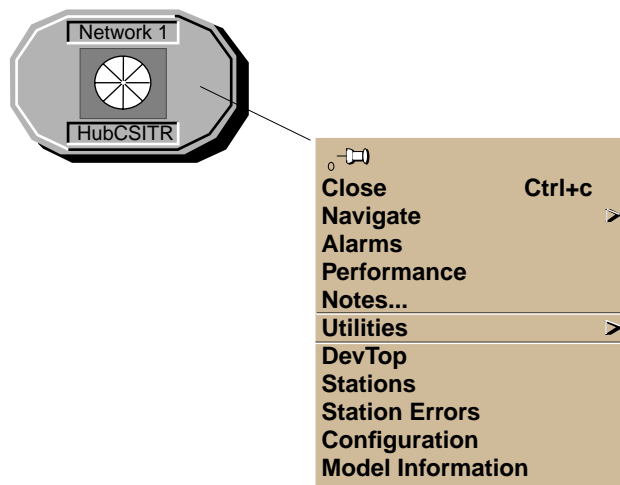

Figure 3-1. Accessing the Configuration View

Network Configuration View

The Configuration view provides information on the configuration of the
Network for the TRMM-2/-4 and allows you to modify the values of some
fields. This view provides the following information:

Ring Name
The ASCII name assigned to this ring. This name defaults to Network n,
where n is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the
number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Port Configuration

This section of the Device Configuration view provides the following
information pertaining to the configuration of the device ports:

Station Ports ON Out Of
The total number of enabled station ports on the addressed module.

Ring Ports ON Out Of
The total number of enabled ring in/ring out ports in this port group.

Enable All Station Ports
This button allows you to enable all the station ports in this port group by
setting the value to Enable. The default value is NoEnable.

Enable All Ring Ports
This button allows you to enable all the ring ports in this port group by setting
the value to Enable. The default value is NoEnable.

Host Configuration

This section of the Device Configuration view provides the following
information pertaining to the configuration of the host:

Commands
This button allows you to send commands to the device by setting the correct
value. Possible commands are HardwareReset, SoftwareReset, Open, and
Close. The default value is NoOperation.

Open Status
The status of the device, or errors it has received, with respect to insertion into the ring.

Error Report Timer
The time interval in which the host adapter reports errors to the ring error monitor.

Active Monitor Contention
This button allows you to set or prohibit the possibility of the TRMM-2/-4 becoming the active monitor for the ring by setting the proper Allowed or NotAllowed status.

Host Error Status

This box in the Host Configuration section provides a series of read-only indicator buttons detailing the last error status returned by the TRMM-2/-4. For information on the errors displayed, why they occurred, or how to rectify them, refer to the TRMM-2/-4 Intelligent Hub User's Manual.

Ring Configuration

This button opens the Ring Configuration view, which is described later in this chapter.

Ring Security

This button opens the Security Configuration view, which is described later in this chapter.

Alarms Table

This button opens the Station Alarm Thresholds Table view, which is described later in this chapter.

Ring Configuration View

Access this view through the Ring Configuration button in the Configuration view.

Ring Configuration

This section of the Ring Configuration view displays the following information:

Ring Name
The ASCII name assigned to this ring. This name defaults to Network n, where n is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 Megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any tables with an asterisk (*) to identify it.

Active Stations
The number of active stations currently inserted on the ring.

Beacon Recovery
This button allows you to Enable or Disable automatic beacon recovery for the TRMM-2/-4. When Disabled, the TRMM-2/-4 will not attempt to reinsert itself into the ring after entering a beaconing state. If the device does not support automatic beacon recovery, SPECTRUM will display a status of Invalid.

Ring Alarm/Threshold/State

This section of the Ring Configuration view has three columns, displaying information on the ring alarms, their current thresholds, and their states (Enabled or Disabled). To change these fields you must set the community string in the Model Information view to Read/Write. The applicable ring alarms are as follows:

Ring Purges
The threshold field allows you to set a value for the Ring Purges alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

AMP Errors
The threshold field allows you to set a value for the Active Monitor Error alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Claim Token Errors
The threshold field allows you to set a value for the Claim Token Errors alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Lost Frames
The threshold field allows you to set a value for the Lost Frames alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Token Errors
The threshold field allows you to set a value for the Token Errors alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Beacon State
The threshold field allows you to set a value for the Beacon State alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Frame Count
The threshold field allows you to set a value for the Frame Count alarm threshold, and the state button allows you to Enable or Disable detection of this alarm.

Ring Timebase
This field allows you to set the timebase for getting and setting all alarms for this ring. This value is measured in seconds.

Security Configuration View

You can access this view through the Ring Security button in the Configuration view. The Security Configuration view provides information on the security configuration for the ring, and allows you to modify the values of some fields. This view provides the following information:

Ring Name
The ASCII name assigned to this ring. This name defaults to Network n, where n is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Administration State
This button allows you to select the security administration state for the TRMM-2/-4. A state of EnabledWithAlarms causes SPECTRUM to generate an alarm upon insertion of an illegal station into the ring. A state of EnabledWithRemoveAndAlarm generates an alarm and also removes the illegal station from the ring. Selecting Disabled turns off security for the TRMM-2/-4.

Total Allowed Stations
The total number of stations in the Allowed Stations list.

Allowed Station Address Table

This table contains a list of addresses and interface numbers for the stations allowed on the ring. The active monitor for the ring is indicated by an asterisk (*) beside the address. Double-clicking on a table entry opens the Modify Allowed Station List View, described later in this section. This table has the following buttons:

Update

This button updates the contents of the Station Address Table.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort on by clicking one of the column heading buttons.

Modify Allowed Station List

This button opens the Modify Allowed Station List view, which is described later in this chapter.

Station Alarm Thresholds View

You can access this view through the Ring Security button in the Configuration view or through the Alarms Table button in the 802.5 Station Isolating Errors view described later in this chapter. This view displays a Station Alarm Thresholds Table containing information for all stations directly connected to the TRMM-2/-4 device, buttons to manipulate the information in the table, and buttons to access other views.

Ring Name
The ASCII name assigned to this ring. This name defaults to Network n, where n is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any tables with an asterisk (*) to identify it.

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

Line
The current alarm threshold setting for line errors on the device.

Burst
The current alarm threshold setting for burst errors on the device.

A/C
The current alarm threshold setting for address/copied errors on the device.

Internal
The current alarm threshold setting for internal errors on the device.

Congestions
The current alarm threshold setting for congestion errors on the device.

Update

This button updates the contents of the Station Alarm Thresholds Table.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort the table with by clicking one of the column heading buttons.

Alarm States Table

This button opens the Station Alarm States Table view, which provides the same button functions and fields as the Alarms Thresholds view, but displays information on the state of each alarm threshold (Enabled or Disabled).

Station Detail

This button opens the Station Detail View, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

Accessing the Station Table Views

You can access two Station Table views available for the TRMM-2/-4 as follows:

- The Station Table view by selecting Stations from the Network Application Icon Subviews menu from the Application view.

- The 802.5 Station Table view by clicking on the Detail button in the Performance View for the LAN_802_5 model containing the TRMM-2/-4 when the TRMM-2/-4 has been designated as the monitoring point for the LAN.

Token Ring Station Table View

This view displays a Station Table containing information for all stations directly connected to the TRMM-2/-4 device, buttons to manipulate the information in the table, and buttons to access other views. The information displayed by this view is as follows:

Ring Name
The ASCII name assigned to this ring. This name defaults to Network n, where n is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any tables with an asterisk (*) to identify it.

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

Frames
The total number of frames that have been received/generated by this station.

Errors
The total number of errors that this station has detected on the ring.

Module
The slot number of the token ring module to which this station is connected.

Port
The number of the port on the token ring module to which this station is connected.

Update

This button updates the contents of the Station Table.

Totals/Deltas

This button affects the display of statistical information. Selecting Totals displays the statistics as totals since the TRXI was initialized. Selecting Deltas displays the difference between the current value and the value at the time of the last update. The button displays the format currently selected.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort on by clicking one of the column heading buttons.

Isolating Errors

This button opens the Station Isolating Errors View, which is described later in this chapter.

Alarms Table

This button opens the Station Alarm Thresholds View, which is described later in this chapter.

Station Detail

This button opens the Station Detail View, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

802.5 Station Table View

This view displays a Station Table containing information for all stations on the ring, buttons to manipulate the information in the table, and buttons to access other views. The station that is the active monitor will be marked (*) to distinguish it from the other stations in the list. You can access this view by clicking on the Detail button in the Performance view for the LAN_802_5 model containing the TRMM-2/-4, if the TRMM-2/-4 within the LAN is the monitoring point. The information displayed by this view is much the same as the Cabletron Token Ring Station Table view, providing the following information:

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

Frames
The total number of frames that have been received/generated by this station.

Errors
The total number of errors that this station has detected on the ring.

Update

This button updates the contents of the Station Table.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort the table with by clicking one of the column heading buttons.

Station Detail

This button opens the Station Detail view, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

Isolating Errors

This button opens the 802.5 Station Isolating Errors view, providing the same information and button functions as the Station Isolating Errors view described later in this chapter.

Configuration

This button opens the 802.5 Configuration view, which provides the same information and button functions as the TRMM-2/-4 Device Configuration view described earlier in this chapter.

Token Ring Isolating Errors Table

You can access this view through the Isolating Errors Table button in the Token Ring Station Table view. This view displays an Isolating Errors Table containing information for all stations directly connected to the TRMM-2/-4 device, buttons to manipulate the information in the table, and buttons to access other views. The information displayed by this view is as follows:

Ring Name
The ASCII name assigned to this ring. This name defaults to Network n, where n is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any tables with an asterisk (*) to identify it.

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

Line
The number of line errors that this station has detected on the ring.

Burst
The number of burst errors that this station has detected on the ring.

A/C
The number of address/copied errors that this station has detected on the ring.

Abort
The number of abort sequences that this station has sent.

Internal
The number of internal errors that this station has detected.

Update

This button updates the contents of the Station Isolating Errors Table.

Totals/Deltas

This button affects the display of statistical information. Selecting Totals displays the statistics as totals since the TRXI was initialized. Selecting Deltas displays the difference between the current value and the value at the time of the last update. The button displays the format currently selected.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort the table with by clicking one of the column heading buttons.

Non-Isolating Errors

This button opens the Station Non-Isolating Errors view, which is described later in this chapter.

Alarms Table

This button opens the Station Alarm Thresholds view, which is described later in this chapter.

Station Detail

This button opens the Station Detail view, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

Token Ring Non-Isolating Errors Table View

You can access this view through the Non-Isolating Errors Table button in the Token Ring Station Isolating Errors view. This view displays a Non-Isolating Errors Table containing information for all stations directly connected to the TRMM-2/-4 device, buttons to manipulate the information in the table, and buttons to access other views. The information displayed by this view is as follows:

Ring Name
The ASCII name assigned to this ring. This name defaults to Network n, where n is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Active Monitor
The MAC address of the active monitor for the ring. This address will appear in any tables with an asterisk (*) to identify it.

Station Address
The MAC address of the station to which this information pertains.

Station Name
The ASCII name assigned to this station.

LostFrames
The number of lost frames that this station has detected on the ring.

Congestions
The number of congestion errors that have occurred at this station.

FrameCopied
The number of frame copied errors that this station has detected on the ring.

Token
The number of token errors that this station has detected on the ring while it was acting as the active monitor.

Frequency
The number of frequency errors that this station has detected on the ring.

Update

This button updates the contents of the Station Non-Isolating Errors Table.

Totals/Deltas

This button affects the display of statistical information. Selecting Totals displays the statistics as totals since the TRXI was initialized. Selecting Deltas displays the difference between the current value and the value at the time of the last update. The button displays the format currently selected.

MAC/Canonical

This button affects the display of the station addresses, toggling the format between MAC (Physical) and Canonical (Ethernet). The button displays the format NOT currently selected.

Set/Clear Filter

This button allows you to set a filter affecting the stations displayed in the table. You select an attribute to filter against by clicking one of the column heading buttons.

Sort Up/Sort Down/Un-Sort

This button allows you to sort the stations displayed in the table. You select an attribute to sort the table with by clicking one of the column heading buttons.

Alarms Table

This button opens the Station Alarm Thresholds view, which is described later in this chapter.

Station Detail

This button opens the Station Detail View, which is described later in this chapter.

Station Alarms

This button opens the Station Alarms dialog box, which is described later in this chapter.

Remove Station

This button allows you to remove the selected station from the ring.

Station Detail View

You can access this view through the Station Detail button in the Token Ring Station Table View. The Station Detail view provides detailed information on the selected station. This view includes three color-coded pie charts presenting a breakdown of Token Ring application statistics. Each statistic is presented as a total amount since the TRMM-2/-4 was initialized and as a percentage of overall traffic. Three buttons at the bottom of each pie chart select the way in which the data is represented (Total, Delta, and Accum). Another button, Clear, works in conjunction with the Accum button. For more information on these buttons refer to the SPECTRUM GIB Editor Guide. Table 3-1 throughTable 3-3 provide information on the statistics displayed by each chart. This view also provides the following information:

Station Address
The MAC address of the station to which the information in this table pertains.

Station Name
The ASCII name assigned to this station.

Station Module
The slot number of the token ring module to which this station is connected.

Station Port
The number of the port on the token ring module to which this station is connected.

Station Priority
The station's maximum access priority.

Station Removal

This button allows you to modify the removal state of the station, and displays the last request made of the device. Remove causes the station to remove itself from the ring, NotRemovable disables removal from the ring, and DoNotRemove is the default setting and does not affect the station.

Upstream
The MAC address of the device (neighbor) immediately upstream of the TRMM-2/-4 on the ring.

Downstream
The MAC address of the device (neighbor) immediately downstream of the TRMM-2/-4 on the ring.

Configure Station Alarms

This button opens the Station Alarms Configuration View, which allows you to change the threshold value and state on the station for the Line, Burst, A/C, Internal, and Receive Congestion errors.

Table 3-1. Frame Breakdown Pie Chart

Statistic	Definition
Frames	The total number of frames detected on this station or ring.
Errors	The total number of errors detected by this station or ring.

Table 3-2. Isolating Errors Pie Chart

Statistic	Definition
Line	The total number of line errors that have occurred on this ring.
Burst	The total number of burst errors that have occurred on this ring.
A/C	The total number of address/copied errors that have occurred on this ring.
Abort Sequence	The total number of abort sequences transmitted on this ring.
Internal	The total number of internal errors detected by station on this ring.

Table 3-3.　　　　Non-Isolating Errors Pie Chart

Statistic	Definition
Lost Frames	The total number of times a station has had its TRR timer expire while trying to transmit.
Congestions	The total number of times a station recognizes a frame addressed to it, but has no available buffer space.
Frame Copied	The total number of times a station recognizes a frame addressed to it, and detects that the FS field A bits are set to 1.
Token	The total number of times the station acting as active monitor recognizes an error condition requiring a token be transmitted.
Frequency	The total number of frequency errors on this ring.

Station Alarms Dialog Box

You can access this dialog box through the Station Alarms button in the Token Ring Station Table view. The Station Alarms dialog box allows you to read, display, and modify the alarm settings for a single station or list of stations. The list displays the stations that were on the ring at the time the dialog box was opened, however you can read and modify the settings to a valid station that does not appear in the list and was added after opening the view by entering its address in the Station field. The Station Alarms dialog box provides the following information:

Station
The address of the current station. You can enter the address of a valid station in this field to make it the current station.

Alarm
The threshold alarms that can be manipulated. The alarms in this column include Line, Internal, Burst, A/C, and Congestion.

Threshold
The current setting for each corresponding alarm threshold. You can change the values by selecting the field and editing the number.

State
The state of each corresponding alarm threshold (Enable or Disable).

Stations
The MAC addresses of all stations in the ring at the time the dialog box was opened, except the current station, which is displayed in the Apply Settings to list. Double-clicking on an address in this list moves it to the Apply Settings to list.

Apply Settings To
The MAC addresses of all stations to which the threshold settings may be applied. This list will always contain the current station's MAC address upon opening the dialog box. Double-clicking on an address in this list moves it to the Stations list.

`>`

This button moves the selected item from the Stations list to the Apply Settings to list.

`<`

This button moves the selected item from the Apply Settings to list to the Stations list.

`>>`

This button moves all of the stations from the Stations list to the Apply Settings to list. The current station remains at the top of the Apply Settings to list if it is a valid station.

`<<`

This button moves all of the stations from the Apply Settings to list to the Stations list. The current station remains at the top of the Apply Settings to list if it is a valid station.

`Apply`

This button applies the threshold settings to the stations listed in the Apply Settings to list, or the station entered into the Station field if the list is empty.

`Read`

This button initiates a read of the threshold settings for the selected station, or the station entered into the Station field.

`Cancel`
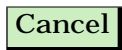
This button exits the dialog box without applying settings to the stations, or once you have applied all changes and wish to exit.

Modifying the Threshold Settings

To change the threshold settings for one or more stations, follow these steps:

1. Move the addresses of all the stations to be modified to the Apply Settings to list. If you are only modifying the current station, this step is not necessary. If you wish to modify a valid station that does not appear in the list, enter its MAC address into the Station field. For information on how to move addresses between lists, refer to the buttons described earlier in this section.

2. Select the desired settings to be applied to the current station and all stations in the Apply Settings to list by clicking on Enable or Disable for each alarm threshold, and typing a value into each Threshold field.

3. Click on the Apply button.

If the new alarm thresholds cannot be written to the device, due to the device being down, an error message appears and you should try again later.

Reading Thresholds from a Station

To read the current threshold settings from any station, follow these steps:

1. Select the station to be read from the Stations or Apply Settings to list. If you are reading from the current station, this step is not necessary. If you wish to modify a valid station that does not appear in either list, enter its MAC address into the Station field.

2. Click on the Read button. The threshold settings for the selected station are read from the device.

Modify Allowed Station List View

You can access this view by double-clicking on a table entry in the Security Configuration View. This view allows you to modify the security for the ring by adding or removing stations from the ring's list of allowed stations. This view provides the following functions:

> **CAUTION**
>
> Do not attempt to modify Ring Security without a complete understanding of Token Ring concepts and the TRMM-2/-4 device. Removal of the station acting as the connecting bridge from the Ring Security Allowed Station List can cause isolation from the ring.

Security Administration State

This section of the Modify Allowed Station List view allows you to choose the level of security for the ring. You may only select one option at a time. Click on the desired option to select it. The buttons change state to indicate the selected option.

Disable
This security option disables the ring security. All stations are allowed on the ring.

Enable with Alarm
This security option enables the ring security, and any station entering the ring will generate an alarm unless it is on the secure list. The device will place the station address on the Allowed Stations list.

Enable with Remove and Alarm
This security option enables the ring security, and any station not on the secure list that enters or currently resides on the ring will generate an alarm and be removed from the ring.

Allowed Stations

This section of the Modify Allowed Station List view displays the list of stations currently allowed on the ring. Double-clicking on an item in the list will move it to the Disallowed Stations window, however you cannot move a station from the Allowed Stations window if the security is set to Enable with Alarm. A symbol (>) indicates that this station has recently been moved to the Disallowed Stations window from the Allowed Station window, and will remain until the changes are applied.

Disallowed Stations

This section of the Modify Allowed Station List view acts as a scratch pad or buffer to store addresses currently disallowed on the ring, but that you may want to move to the Allowed Stations window in the future. The ring does not read this buffer to deny ring access to certain stations, but rather denies access to all stations not explicitly listed in the Allowed Stations window. Double-clicking on an item in the list will move it to the Allowed Stations window. A symbol (<) indicates that this station has recently been moved to the Allowed Stations window from the Disallowed Station window, and will remain until the changes are applied.

>

This button will move the selected station from the Allowed Stations window to the Disallowed Stations window. A symbol (>) indicates that this station has

recently been moved to the Disallowed Stations window from the Allowed Station window, and will remain until the changes are applied. You cannot move a station from the Allowed Stations window if the security is set to Enable with Alarm.

`<`

This button will move the selected station from the Disallowed Stations window to the Allowed Stations window. A symbol (<) indicates that this station has recently been moved to the Allowed Stations window from the Disallowed Station window, and will remain until the changes are applied.

`ADD`

This button allows you to add a new station. The station address must be added in valid hex MAC address form, and valid separators are the colon (:), period (.), and dash (-). You can add the new station to either the Allowed or Disallowed Station window by selecting the appropriate option in the ADD Station dialog box. A symbol (+) indicates that this station has recently been added, and will remain until the changes are applied. Selecting a recently added and still marked (+) station and clicking on the DELETE button will remove it from the window.

`DELETE`

This button allows you to remove the selected station (Refer to the CAUTION earlier in this section). You may remove any station address except that belonging to the device itself, or a station from the Allowed Stations window if the security is set to Enable with Alarm. A symbol (-) indicates that this station has been marked for removal, and will remain until the changes are applied, at which time the station is actually removed from the window. Selecting the station and clicking on the ADD button will remove the symbol (-) and unmark the station for removal. This button will also remove a station marked with the symbol (+).

`Delete All Allowed Stations`
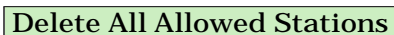
This button allows you to remove all of the stations in the Allowed Stations window (Refer to the CAUTION earlier in this section). A symbol (-) marks all of the items in the window, indicating that the stations have been designated for removal, and will remain until the changes are applied, at which time the stations are actually removed from the window. This option will remove all station addresses except that belonging to the device itself. Selecting a station and clicking on the ADD button will remove the symbol (-) and unmark that station for removal.

`Apply`
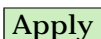
This button applies all changes made to the Allowed and Disallowed Stations windows, writing the list from the Allowed Stations window to the device and

from the Disallowed Stations window to SPECTRUM, and removes all indicator markings from the modified stations.

Read

This button updates the Allowed and Disallowed Stations windows by reading the saved values from both the device and SPECTRUM. This serves to reset any changes you made to either window but did not apply.

Cancel

This button will exit you from the view. Only changes that have been applied will be saved.

Changing the Ring Security State

To change the level of security on the ring, follow these steps:

1. Click on the desired security option.

2. Click on the Apply button, and the select OK in the confirmation window.

If the new security state cannot be written to the device, a Cannot Update error message appears. There may be a problem contacting the device, or the firmware may not have updated, and you should click on the Read button before attempting another update.

Adding Stations

To add stations to the view, follow these steps:

1. Click on the ADD button. A pop-up dialog box appears.

2. Enter the station address in the text entry field following the guidelines described in the ADD button description earlier in this section.

3. Select the option corresponding to the list you want to add the station to (Allowed or Disallowed) and click on the Apply button.

If the new station cannot be written to the device, a Cannot Update error message appears. There may be a problem contacting the device, or the address you are trying to add to the station's allowed list may already exist, and you should click on the Read button before attempting another update.

Deleting Stations

To remove stations from the view, follow these steps:

1. Select the station address you want to remove (Refer to the CAUTION earlier in this section).

2. Click on the DELETE button. For restrictions governing the deletion of stations, refer to the DELETE button description earlier in this section.

3. Click on the Apply button.

Event and Alarm Messages

What is in this Chapter

This chapter describes the types of events and alarms generated by the TRMM-2/-4 and any probable cause messages corresponding to these alarms.

TRMM-2/-4 Events and Alarms

This table describes the event messages appearing in the Event Log, and any corresponding probable cause messages that may be displayed in the Enterprise Alarm Manager for the TRMM-2/-4.

Table 4-1. TRMM-2/-4 Events and Alarms

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010203 {d "%w- %d %m-, %Y - %T"} - The model created is not the same type as the device. Model type = {t}, Name = {m}, User = {u}. (event [{e}])	CsPCause/Prob00010203 The model created is not the same type as the device.
CsEvFormat/Event00010306 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has been cold started. (event [{e}])	Not Applicable

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010307 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m},has been warm started. (event [{e}])	No probable cause message.
CsEvFormat/Event00010308 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected a communication Link Down. (event [{e}])	CsPCause/Prob00010308 Communication link is down.
CsEvFormat/Event00010309 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected a communication Link Up. (event [{e}])	No probable cause message.
CsEvFormat/Event0001030a {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an Authentication Failure. (event [{e}])	CsPCause/Prob0001030a Authorization failure. Other user is trying to connect to device with an invalid community string.
CsEvFormat/Event0001030b {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an EGP Neighbor Loss. EGP Neighbor IP address is {0 1}. (event [{e}])	CsPCause/Prob0001030b Lost contact with EGP neighbor.
CsEvFormat/Event00010401 {d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with an IP address already used by another model. (event [{e}])	CsPCause/Prob00010401 DUPLICATE IP ADDRESS: The model has the same IP address as that of some other model.
CsEvFormat/Event00010402 {d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with a physical (Mac) address already used by another model. (event [{e}])	CsPCause/Prob00010402 DUPLICATE PHYSICAL ADDRESS: The model has the same Physical address (Mac address) as that of some other model.

Table 4-1. TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420107 {d "%w- %d %m-, %Y - %T"} - MODULE REMOVAL - Device {m} of type {t} reported that module {I 1} has been removed. (event [{e}])	CsPCause/Prob00420107 MODULE REMOVAL SYMPTOMS: A module within this chassis has been removed or has failed.
CsEvFormat/Event00420108 {d "%w- %d %m-, %Y - %T"} - MODULE INSERTION - Device {m} of type {t} reported that a module has been inserted into slot {I 1}. (event [{e}])	CsPCause/Prob00420108 MODULE INSERTION SYMPTOMS: A module has been inserted into this chassis.
CsEvFormat/Event00420119 {d "%w- %d %m-, %Y - %T"} - TEMPERATURE WARM - Device {m} of type {t} reported that the module {I 1} temperature is warm. (event [{e}])	CsPCause/Prob00420119 TEMPERATURE WARM SYMPTOMS: The module may be defective or a fan has failed in the chassis. RECOMMENDED ACTIONS: 1) Verify that module is not defective. 2) Check for fans failures in the chassis and repair as needed.
CsEvFormat/Event0042011a {d "%w- %d %m-, %Y - %T"} - TEMPERATURE HOT - Device {m} of type {t} reported that the module {I 1} temperature is hot. (event [{e}])	CsPCause/Prob0042011a TEMPERATURE HOT SYMPTOMS: A module may be defective or a fan has failed in the chassis. A serious heat condition is present and should be addressed immediately. RECOMMENDED ACTIONS: 1) Verify that module is not defective. 2) Check for fans failures in the chassis and repair as needed.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event0042011b {d "%w- %d %m-, %Y - %T"} - VOLTAGE LOW - Device {m} of type {t} reported that the slot {I 1} power supply voltage is low. (event [{e}])	CsPCause/Prob0042011b VOLTAGE LOW SYMPTOMS: The internal voltage of the power supply module is low. PROBABLE CAUSES: 1) The power supply unit is defective. 2) An AC power failure has occurred in the power supply. RECOMMENDED ACTIONS: 1) Check the power supply unit on device. 2) Check power source to device.
CsEvFormat/Event0042011c {d "%w- %d %m-, %Y - %T"} - TEMPERATURE NORMAL - Device {m} of type {t} reported that the module {I 1} temperature is normal. (event [{e}])	No probable cause message.
CsEvFormat/Event0042011d {d "%w- %d %m-, %Y - %T"} - VOLTAGE NORMAL - Device {m} of type {t} reported that the slot {I 1} power supplly voltage is normal. (event [{e}])	No probable cause message.
CsEvFormat/Event0042011e {d "%w- %d %m-, %Y - %T"} - FAN ABNORMAL - Device {m} of type {t} reported that a fan in the chassis has failed or is operating at an abnormal RPM rate. (event [{e}])	CsPCause/Prob0042011e FAN ABNORMAL SYMPTOMS: A problem has been detected with a cooling fan or the fan tray assembly for this device. RECOMMENDED ACTIONS: This failure should be addressed before overheating causes damage to the device. Check for fans failures in the chassis and repair as needed.
CsEvFormat/Event0042011f {d "%w- %d %m-, %Y - %T"} - FAN NORMAL - Device {m} of Type {t} reported that a fan in the chassis has resumed normal operation. (event [{e}])	No probable cause message.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420201 {d "%w- %d %m-, %Y - %T"} - PORT INSERTED - Device {m} of type {t} reported that a station has been inserted into port {I 1} in module {I 2}. (event [{e}])	No probable cause message.
CsEvFormat/Event00420202 {d "%w- %d %m-, %Y - %T"} - PORT DEINSERTED - Device {m} of type {t} reported that a station has been deinserted from port { I 1} in module {I 2}. (event [{e}])	No probable cause message.
CsEvFormat/Event00420203 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of type {t} reported that module {I 1} has entered the ring speed fault state. (event [{e}])	CsPCause/Prob00420203 RING SPEED FAULT SYMPTOMS: A token ring module has entered the ring speed fault state. PROBABLE CAUSES: 1) A station or ring port attaching with a different speed than this module is configured for. RECOMMENDED ACTIONS: 1) Detach the station or ring port from the module. 2) Re-configure the station or ring port speed to match the speed of the affected module. 3) Re-attach the station or ring port to the module.
CsEvFormat/Event00420204 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of type {t} reported that module {I 1} has left the ring speed fault state. (event [{e}])	No probable cause message.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420205 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULTED - Device {m} of type {t} reported that ring port {I 1} in module {I 2} has entered the wrapped state while its management state was enabled. (event [{e}])	CsPCause/Prob00420205 RING PORT FAULTED SYMPTOMS: A ring port has entered the wrapped state while its management state was enabled. PROBABLE CAUSES: 1) Bad cable connected to affected port. 2) Device is down at other end of the cable. 3) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to affected port. 2) Power up device at other end of the cable. 3) Check device connection at other end of the cable.
CsEvFormat/Event00420206 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULT CLEARED - Device {m} of type {t} reported that ring port {I 1} in module {I 2} has left the wrapped state. (event [{e}])	No probable cause message.
CsEvFormat/Event00420207 {d "%w- %d %m-, %Y - %T"} - BEACON STATE - Device {m} of type {t} reported that station {T 2} attached to port {I 5} in module {I 4} has detected a beacon of type {T LstBcnType 1}. Its upstream neighbor station is {O 3}. (event [{e}])	CsPCause/Prob00420207 BEACON STATE SYMPTOMS: A station attached to this device has detected a new beacon on the ring while the ring was in operational state. PROBABLE CAUSES: 1) The cable between this station and its upstream neighbor. 2) The token ring card in the upstream neighbor station is bad. 3) This station's token ring card is bad. RECOMMENDED ACTIONS: 1) Check the cable between this station and its upstream neighbor. 2) Check the token ring card in the upstream neighbor station. 3) Check this station's token ring card.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420208 {d "%w- %d %m-, %Y - %T"} - BEACON STATE CLEARED - Device {m} of type {t} reported that the last beacon of type {T LstBcnType 1} has been cleared. (event [{e}])	No probable cause message.
CsEvFormat/Event00420209 {d "%w- %d %m-, %Y - %T"} - STATION ADDED - Device {m} of type {t} reported that station {T 1} has been added to the Allowed Station List. (event [{e}])	No probable cause message.
CsEvFormat/Event0042020a {d "%w- %d %m-, %Y - %T"} - STATION REMOVED - Device {m} of type {t} reported that station {T 1} has been removed from the Allowed Station List. (event [{e}])	No probable cause message.
CsEvFormat/Event0042020b {d "%w- %d %m-, %Y - %T"} - RING CONFIGURATION CHANGED - Device {m} of Type {t} reported that its ring configuration has changed. (event [{e}])	No probable cause message.
CsEvFormat/Event0042020c {d "%w- %d %m-, %Y - %T"} - PORT REMOVED DURING FAULT RECOVERY - Device {m} of type {t} reported that port {I 1} in module {I 2} was removed from the ring during a fault recovery condition. (event [{e}])	CsPCause/Prob0042020c PORT REMOVED DURING FAULT RECOVERY SYMPTOMS: A port was removed from the ring during a fault recovery condition. PROBABLE CAUSES: 1) Bad cable connected to removed port. 2) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to removed port. 2) Check device connection at other end of the cable. 3) After problem is resolved, enable the removed port.

Table 4-1.　　　　TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event0042020d {d "%w- %d %m-, %Y - %T"} - BOARD BYPASSED DURING FAULT RECOVERY - Device {m} of type {t} reported that module {I 2} was bypassed during a fault recovery condition. (event [{e}])	CsPCause/Prob0042020d BOARD BYPASSED DURING FAULT RECOVERY SYMPTOMS: A module was bypassed during a fault recovery condition. PROBABLE CAUSES: 1) This module is configured with a different ring speed than the hub. RECOMMENDED ACTIONS: 1) Pull out the bypassed module from the hub. 2) Re-configure this module's ring speed to match that of the hub. 3) Physically insert the module back into the hub. 4) Set this module's bypass state to inserted.
CsEvFormat/Event0042020e {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION - Device {m} of type {t} reported that port { I 1} in module {I 2} has detected a link while the port's management state was disabled. (event [{e}])	CsPCause/Prob0042020e PORT VIOLATION SYMPTOMS: A link has been detected for a port while its management state was disabled. PROBABLE CAUSES: 1) A physical connection has been made between a station and a port while the port's management state was disabled. RECOMMENDED ACTIONS: 1) If the station belongs on this ring, then enable the port's management state. 2) If the station does not belong on this ring, then physically disconnect the intruding station from the port.
CsEvFormat/Event0042020f {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION CLEARED - Device {m} of type {t} reported that port { I 1} in module {I 2} has detected an unlink while the port's management state was disabled. (event [{e}])	No probable cause message.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420210 {d "%w- %d %m-, %Y - %T"} - FAULT RECOVERY OSCILLATION - Device {m} of type {t} reported that the ring is oscillating. (event [{e}])	CsPCause/Prob00420210 FAULT RECOVERY OSCILLATION SYMPTOMS: The ring is oscillating. Oscillation occurs when the ring fails a short time after recovery.
CsEvFormat/Event00420211 {d "%w- %d %m-, %Y - %T"} - RING PURGE THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring purge threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420211 RING PURGE THRESHOLD EXCEEDED SYMPTOMS: The ring purge threshold value has been exceeded. A ring purge is used to make the ring return to a normal condition. PROBABLE CAUSE: An active monitor will initiate the ring purge process when: 1) A token error condition is detected by the active monitor. 2) An adapter becomes the active monitor in the monitor contention process.
CsEvFormat/Event00420212 {d "%w- %d %m-, %Y - %T"} - RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring active monitor errors threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420212 RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED SYMPTOMS: The ring active monitor errors threshold value has been exceeded. PROBABLE CAUSES: 1) The active monitor may have received a ring purge or an active monitor present frame that it did not transmit. 2) The active monitor may have received a claim token MAC frame which indicates that a duplicate active monitor or another station has detected an error within the active monitor.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420213 {d "%w- %d %m-, %Y - %T"} - RING TOKEN ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring token errors threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420213 RING TOKEN ERRORS THRESHOLD EXCEEDED SYMPTOMS: The ring token errors threshold value has been exceeded. PROBABLE CAUSE: The active monitor has recognized an error condition that requires a token to be transmitted. This occurs when the timer for a valid transmission expires (10ms).
CsEvFormat/Event00420214 {d "%w- %d %m-, %Y - %T"} - RING CLAIM TOKEN THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring claim token threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420214 RING CLAIM TOKEN THRESHOLD EXCEEDED SYMPTOMS: The ring claim token threshold value has been exceeded. PROBABLE CAUSES: When a station in standby monitor state has determined that there is no active monitor operating on the ring. If the station claims the token, it becomes the new active monitor for the ring.
CsEvFormat/Event00420215 {d "%w- %d %m-, %Y - %T"} - RING LOST FRAMES THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring lost frames threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420215 RING LOST FRAMES THRESHOLD EXCEEDED SYMPTOMS: The ring lost frames threshold value has been exceeded. PROBABLE CAUSE: The ring lost frame error occurs when a station is transmitting and its timer for return expires. The lost frame count keeps track of how many frames transmitted by a station fail to return. If a frame becomes lost the active monitor will issue a new token.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00420216 {d "%w- %d %m-, %Y - %T"} - RING BEACON STATE THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring beacon state threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420216 RING BEACON STATE THRESHOLD EXCEEDED SYMPTOMS: The ring beacon state threshold value has been exceeded. PROBABLE CAUSE: When a station determines that a serious ring failure has occured it will generate a beacon MAC frame.
CsEvFormat/Event00420217 {d "%w- %d %m-, %Y - %T"} - RING FRAME COUNT THRESHOLD EXCEEDED - Device {m} of type {t} reported that the ring frame count threshold value of {I 1} has been exceeded within the timebase value of {I 2}. (event [{e}])	CsPCause/Prob00420217 RING FRAME COUNT THRESHOLD EXCEEDED SYMPTOMS: The ring vrame count threshold value has been exceeded.
CsEvFormat/Event00420218 {d "%w- %d %m-, %Y - %T"} - STATION LINE ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the line errors threshold value of {I 1} within the timebase value of {I 2}. (event [{e}])	No probable cause message.
CsEvFormat/Event00420219 {d "%w- %d %m-, %Y - %T"} - STATION INTERNAL ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the internal errors threshold value of {I 1} within the timebase value of {I 2}. (event [{e}]	No probable cause message.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event0042021a {d "%w- %d %m-, %Y - %T"} - STATION BURST ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the burst errors threshold value of {I 1} within the timebase value of {I 2}. (event [{e}])	No probable cause message.
CsEvFormat/Event0042021b {d "%w- %d %m-, %Y - %T"} - STATION A/C ERRORS THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the A/C errors threshold value of {I 1} within the timebase value of {I 2}. (event [{e}])	No probable cause message.
CsEvFormat/Event0042021c {d "%w- %d %m-, %Y - %T"} - STATION RECEIVER CONGESTION THRESHOLD EXCEEDED - Device {m} of type {t} reported that station {O 3} has exceeded the receiver congestion threshold value of {I 1} within the timebase value of {I 2}. (event [{e}])	No probable cause message.
CsEvFormat/Event0042021d {d "%w- %d %m-, %Y - %T"} - STATION REMOVE FAILURE - Device {m} of type {t} reported that station {O 1} could not be removed from the ring after three attempts. (event [{e}])	No probable cause message.
CsEvFormat/Event00010810 {d "%w- %d %m-, %Y - %T"} - RMON rising threshold trap received from model {m} of type {t}. AlarmVariable {O 2}, AlarmSampleType {I 3}, AlarmValue {I 4}, and AlarmRisingThreshold {I 5}. (event [{e}])	CsPCause/Prob00010810 REMOTE MONITOR RISING ALARM THRESHOLD EXCEEDED This trap will be generated when the value of the trap exceeds the rising threshold for the alarm.

Table 4-1.   TRMM-2/-4 Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010811 {d "%w- %d %m-, %Y - %T"} - RMON falling threshold trap received from model {m} of type {t}. AlarmVariable {O 2}, AlarmSampleType {I 3}, AlarmValue {I 4}, and AlarmFallingThreshold {I 5}. (event [{e}])	CsPCause/Prob00010811 REMOTE MONITOR FALLING ALARM THRESHOLD EXCEEDED This trap will be generated when the value of the trap exceeds the falling threshold for the alarm.
CsEvFormat/Event00010812 {d "%w- %d %m-, %Y - %T"} - RMON packet match trap received from model {m} of type {t}. Channel description: {S 3}. Channel had {I 2} matches. (event [{e}])	CsPCause/Prob00010811 PACKET ATCH TRAP This trap will be generated when a packet is captured by a channel that in configured for sending SNMP traps.

Chapter 5

Application View

What is in this Chapter

This chapter describes the application-specific views available for the TRMM-2/-4 Management Module.

Accessing the Application Views

Access the Application Views using one of the following methods:

• Double-click on the Application View label of the device icon.

Application View Label
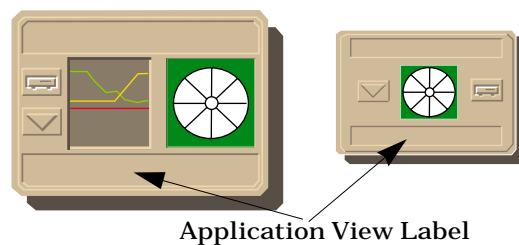
• Highlight the device icon and select Application from the Icon Subviews menu.

```
 ∘—⊨
Go Back
Go Up                    ⊳
Icon Subviews            ⊳    ∘—⊨
View Path                ⊳   Device              ⊳
New View                 ⊳   DevTop
Bookmarks                ⊳   Application
View History             ⊳   Acknowledge
Current View Info...         ☐ Flash Green Enabled
Notes...                     Configuration
Jump by name...              Model Information
Zoom                     ⊳   Primary Application
Map Hierarchy            ⊳
```
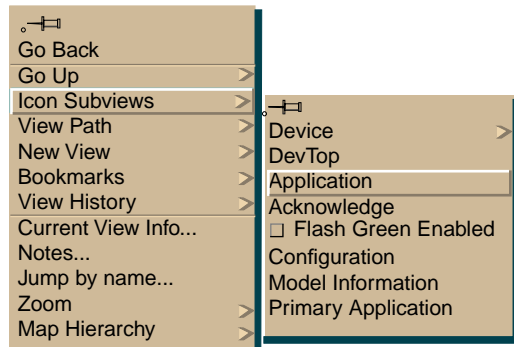
TRMM-2/-4 Application View

The Application view for the TRMM-2/-4 provides application icons that allow access to increasingly detailed views of network information. The device-specific applications are as follows:

• Token Ring Application (HubCSITR)

An example of a TRMM-2 Application view in the icon mode is shown in Figure 5-1. An example of the same TRMM-2 Application view in the list mode is shown in Figure 5-2.

Figure 5-1. TRMM-2 Application View (Icon Mode)
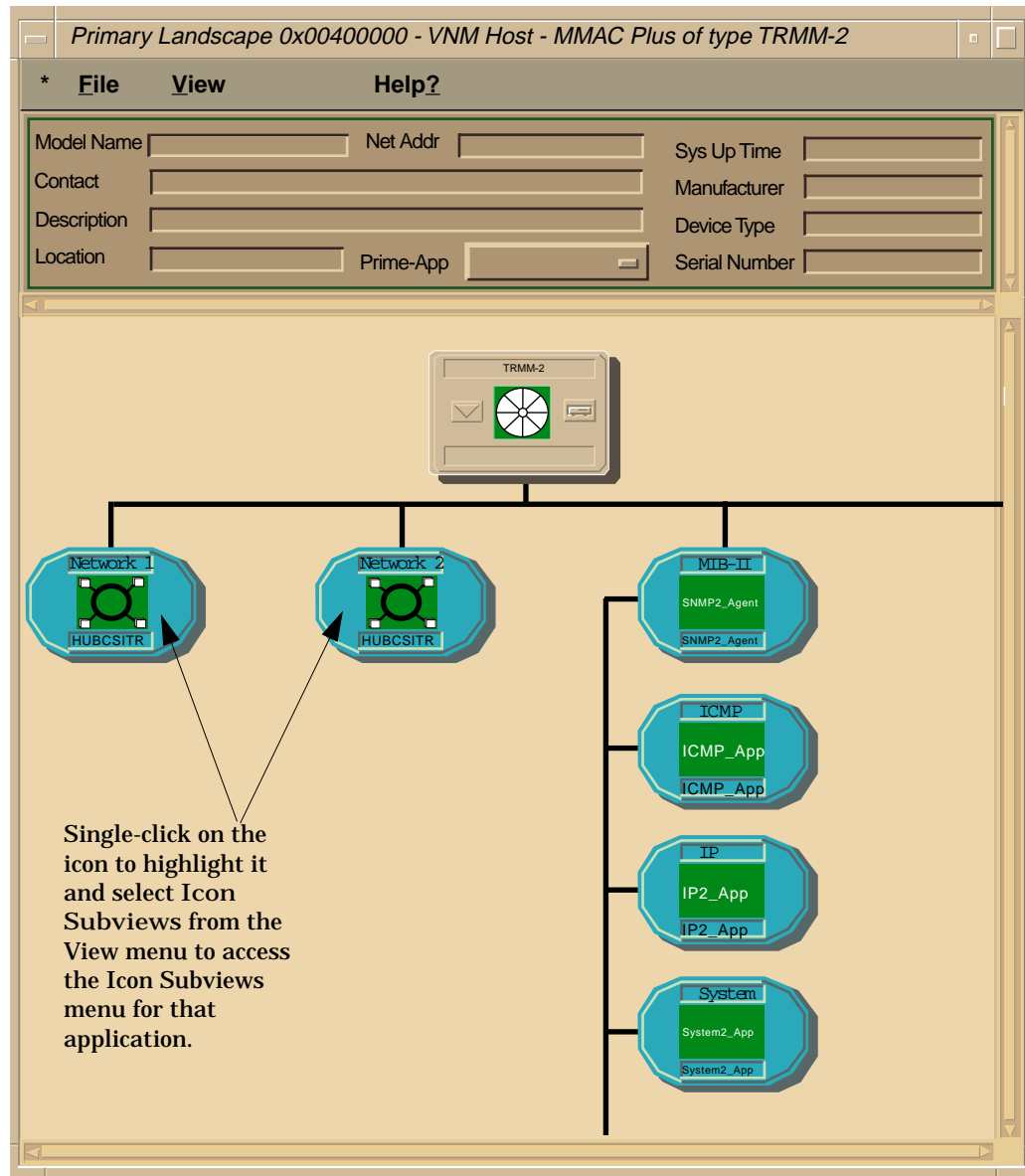
Figure 5-2.   Application View (List Mode)
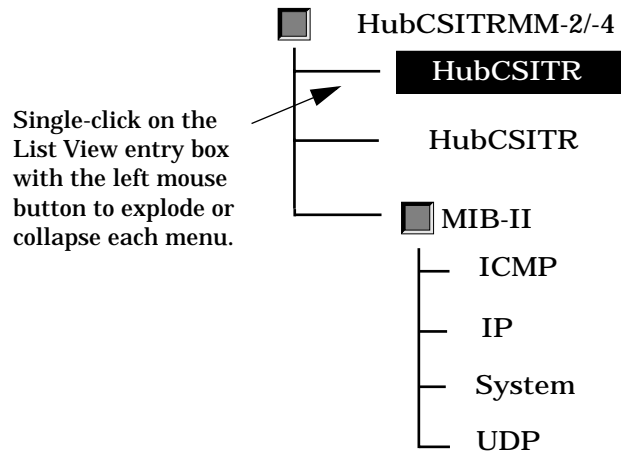
Token Ring Application Views

This section describes the views available for the Token Ring applications supported by the TRMM-2/-4. The supported Token Ring application (Network 1) has a corresponding model type name of CtTokenRingApp. Four application-specific subviews are available for the Token Ring application. From the TokenRingApp Icon (Icon Mode) or the Network 1 text label (List Mode) Icon Subviews menu. You can access the following Token Ring Application network specific views:

- DevTop View
- Performance
- Configuration
- Stations
- Station Errors

For information on the Token Ring Configuration, Station Table, and Station Isolating Errors Views, refer to Chapter 3, Configuration Views.

Token Ring Performance View

You can access the Performance view for the Token Ring application from the Icon Subviews menu for the the HubCSITR icon. The Token Ring Performance view displays a breakdown of statistics for the application. This view also provides the following fields:

Ring Name
The ASCII name assigned to this ring. This name defaults to Network n, where n is a unique integer value.

Ring Number
The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed
The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status
The operational state of the ring.

Multi-Attribute Line Graph

The Multi-Attribute Line Graph provides a general indication of device activity. The attributes displayed are pre-selected and use colors to represent different statistics. Buttons allow you to modify the statistical presentation of the Multi-Attribute Line Graph. Table 5-1 provides the color definitions for the Network 1 application.

For more information on the Multi-Attribute Line Graph, refer to the SPECTRUM Views Reference.

Table 5-1.   Network I Performance Statistic Color Definitions

Statistic	Color
Load	Green
Frame Rate	Blue
Error Rate	Orange
Stations	White

| Error Detail |

The Error Detail button accesses the Token Ring Error Detail View. This view provides the following information:

Active Monitor Changes
The number of times the active monitor has been changed on this ring.

Ring Purges
The number of times the active monitor has purged the ring.

Beacon Events
The number of times the ring has entered a beaconing state.

Longest Beacon Duration
The length of time, displayed in days+hours:minutes:seconds, of the longest beaconing state on this ring.

Last Beacon Duration
The length of time, displayed in days+hours:minutes:seconds, of the last beaconing state on this ring.

Last Beacon Type
The type of beaconing frames last seen on this ring.

This view also provides three color-coded pie charts presenting a breakdown of Token Ring application statistics. Each statistic is presented as a total amount since the TRMM-2/-4 was initialized and as a percentage of overall traffic. Table 5-2 through Table 5-4 provide information on the statistics displayed by each chart.

Table 5-2.   Frame Breakdown Pie Chart

Statistic	Definition
Frames	The total number of frames detected on this station or ring.
Errors	The total number of errors detected by this station or ring.

Table 5-3.   Isolating Errors Breakdown Pie Chart

Statistic	Definition
Line	The total number of line errors that have occurred on this ring.
Burst	The total number of burst errors that have occurred on this ring.

Table 5-3.   Isolating Errors Breakdown Pie Chart (Continued)

Statistic	Definition
A/C	The total number of address/copied errors that have occurred on this ring.
Abort Sequence	The total number of abort sequences transmitted on this ring.
Internal	The total number of internal errors detected by station on this ring.

Table 5-4.   Non-Isolating Errors Breakdown Pie Chart

Statistic	Definition
Lost Frames	The total number of times a station has had its TRR timer expire while trying to transmit.
Congestions	The total number of times a station recognizes a frame addressed to it, but has no available buffer space.
Frame Copied	The total number of times a station recognizes a frame addressed to it, and detects that the FS field A bits are set to 1.
Token	The total number of times the station acting as active monitor recognizes an error condition requiring a token be transmitted.
Frequency	The total number of frequency errors on this ring.

Frame Detail

The Frame Detail button accesses the Token Ring Protocol & Frame Size Detail View. This view provides two color-coded pie charts presenting a breakdown of Token Ring application statistics. Each statistic is presented as a total amount since the TRMM-2/-4 was initialized and as a percentage of overall traffic. Table 5-5 and Table 5-6 provide information on the statistics displayed by each chart.

Table 5-5.   Protocol Breakdown Pie Chart

Statistic	Definition
SNA	The total number of SNA frames seen on this ring.
XNS	The total number of XNS frames seen on this ring.
TCP/IP	The total number of TCP/IP frames seen on this ring.
Banyan	The total number of Banyan frames seen on this ring.
IPX	The total number of IPX frames seen on this ring.
NETBIOS	The total number of NETBIOS frames seen on this ring.
LANNetMgr	The total number of LAN Network Manager frames seen on this ring.
Other	The total number of all other frames seen on this ring.

Table 5-6.   Frame Size Breakdown Pie Chart

Statistic	Definition
Up To 63	The total number of frames less than 64 bytes in size seen on this ring.
64-127	The total number of frames between 64 and 127 bytes in size seen on this ring.
128-255	The total number of frames between 128 and 255 bytes in size seen on this ring.
256-511	The total number of frames between 256 and 511 bytes in size seen on this ring.
512-1023	The total number of frames between 512 and 1023 bytes in size seen on this ring.
1024-2047	The total number of frames between 1024 and 2047 bytes in size seen on this ring.
2048-4095	The total number of frames between 2048 and 4095 bytes in size seen on this ring.
4096 And Up	The total number of frames greater than 4096 bytes in size seen on this ring.

Lin/Log

This button toggles between a linear or logarithmic scale presentation of the graph.

Scroll to Date-Time

This button allows you to set the viewing area of the graph to begin at a specified date and time.

Change Time Scale

This button allows you to specify the Y axis time scale for the graph.

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